



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,400	10/16/2003	Zhang-Lin Zhou	200300077-1	1347

22879 7590 12/15/2006

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

MARTINEZ, JOSEPH P

ART UNIT	PAPER NUMBER
----------	--------------

2873

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/688,400

Applicant(s)

ZHOU ET AL.

Examiner

Joseph P. Martinez

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-74 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

Election/restriction mailed on 6-13-06 is withdrawn.

Applicant's election with traverse of claims 2-54 and 57-61 in the reply filed on 7-12-06 is acknowledged, but are moot in view of the new ground(s) of election/restriction.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-56, drawn to a digital dye, classified in class 546, subclass 2.
- II. Claims 57-61 and 74, drawn to an optical switch, classified in class 359, subclass 265.
- III. Claims 62-73, drawn to a display device, classified in class 345, subclass 105.

The inventions are distinct, each from the other because of the following reasons:

The Inventions I and II as defined above are patentably distinct, each from the other since they are structurally so divergent that a reference showing compounds of Invention I would not render the optical switch of Invention II prima facie obvious. A search required for e.g.; compounds of Invention I in class 546, subclass 2 is not the same search required for e.g.; an optical switch of Invention II in class 359, subclass 265 and therefore, constitutes a burdensome search.

The Inventions I and III as defined above are patentably distinct, each from the other since they are structurally so divergent that a reference showing compounds of Invention I would not render the optical switch of Invention II prima facie obvious. A

Art Unit: 2873

search required for e.g.; compounds of Invention I in class 546, subclass 2 is not the same search required for e.g.; a display device of Invention III in class 345, subclass 106 and therefore, constitutes a burdensome search.

Inventions II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the optical switch does not require the particulars of the transparent display electrode. The subcombination has separate utility such as a reflective optical modulator.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required

Art Unit: 2873

because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

If Invention I is elected, Invention I contains claims directed to the following patentably distinct species:

- IA. A digital dye represented by compounds disclosed in scheme 2-1 on page 23 of specification, classified in class 546, subclass 2.
- IB. A digital dye represented by compounds disclosed in scheme 2-2 (A) on page 23 of specification where one of K1, K2 and K5 represents N, classified in class 548, subclass 402.
- IC. A digital dye represented by compounds disclosed in scheme 2-2 (A) on page 23 of specification where none of K1, K2 and K5 represents N, classified in class 549, subclass 3.
- ID. A digital dye represented by compounds disclosed in scheme 2-2 (B) on page 23 of specification where one of K1, K2, K3 and K4 represents N, classified in class 548, subclass 541.
- IE. A digital dye represented by compounds disclosed in scheme 2-2 (B) on page 23 of specification where none of K1, K2, K3 and K4 represents N, classified in class 549, subclass 206.
- IF. A digital dye represented by compounds other than defined above for groups I to V, classified in class 544, subclass 1+.

The species are independent or distinct because they are structurally so divergent that a reference showing compounds of Species IA would not render

Art Unit: 2873

compounds of Species IB-IF *prima facie* obvious. A search required for e.g.; compounds of Species IA in class 546, subclass 2 is not the same search required for e.g.; compounds of Species IB in class 548, subclass 402 and therefore, constitutes a burdensome search.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic.

If Invention III is elected, Invention III contains claims directed to the following patentably distinct species:

IIIA. A display device represented by compounds disclosed in scheme 2-1 on page 23 of specification.

IIIB. A display device represented by compounds disclosed in scheme 2-2 (A) on page 23 of specification where one of K1, K2 and K5 represents N.

IIIC. A display device represented by compounds disclosed in scheme 2-2 (A) on page 23 of specification where none of K1, K2 and K5 represents N.

IIID. A display device represented by compounds disclosed in scheme 2-2 (B) on page 23 of specification where one of K1, K2, K3 and K4 represents N.

IIIE. A display device represented by compounds disclosed in scheme 2-2 (B) on page 23 of specification where none of K1, K2, K3 and K4 represents N.

IIIF. A display device represented by compounds other than defined above for groups I to V.

The species are independent or distinct because they are structurally so divergent that a reference showing compounds of Species IIA would not render compounds of Species IIB-IIF *prima facie* obvious. A search required for e.g.; compounds of Species IIA is not the same search required for e.g.; compounds of Species IIB and therefore, constitutes a burdensome search.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 62 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Due to the complexity of the election/restriction, no telephone call was made to request an oral election to the above restriction requirement.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the

Art Unit: 2873

requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.



Art Unit: 2873

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM  
12-11-06

A handwritten signature in black ink, appearing to read "R. Mack", with a stylized flourish at the end.

RICKY MACK  
SUPERVISORY PATENT EXAMINER